

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

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Claim 1 (currently amended): A method of controlling a process of electrochemically machining an electrically conductive workpiece, wherein the process comprises applying an electric current between the workpiece and an electrically conductive electrode while electrolyte is supplied between the workpiece and the electrode, and the method of controlling comprises:

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measuring a voltage induced by the electric current, and
adapting at least one process control parameter in response to the measured voltage,
characterized by:

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determining information relating to the spectral composition of the measured voltage within a predetermined measuring period during the process of electrochemically machining, said predetermined measuring period having a duration ~~independent of the spectral composition of other voltages based on a characteristic of said electric current~~, and

adapting the at least one process control parameter in accordance with said information.

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Claim 2 (original): A method according to claim 1, wherein said information comprises at least one amplitude representative of at least one frequency component or at least one range of frequency components of the measured voltage.

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Claim 3 (previously presented): A method of controlling a process of electrochemically machining an electrically conductive workpiece, wherein the process comprises applying an electric current between the workpiece and an electrically conductive electrode while electrolyte is supplied between the workpiece and the electrode, and the method of controlling comprises:

measuring a voltage induced by the electric current, and

adapting at least one process control parameter in response to the measured voltage,
characterized by:

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determining information relating to the spectral composition of the measured voltage within a predetermined measuring period during the process of electrochemically machining,

wherein said information comprises at least one amplitude representative of at least an harmonic frequency of the waveform constituted by the measured voltage within the predetermined measuring period, and

adapting the at least one process control parameter in accordance with said information.

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Claim 4 (original): A method according claim 3, wherein the method comprises expanding the wave form within the predetermined measuring period in a Fourier series of trigonometric functions and wherein said amplitudes correspond to the Fourier coefficients C_k of said series.

10 Claim 5 (original): A method according to claim 4, wherein the method comprises determining the sign of the Fourier coefficients C_k of a first number of harmonics of said Fourier series and assigning a specific process condition to at least one specific combination of Fourier coefficients indicating absence or presence of a corresponding harmonic and in case of presence, the relative sign of the corresponding harmonic.

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Claim 6 (original): A method according to claim 5, wherein the method comprises assigning a first process condition of relatively low current density to the absence of a first consecutive number of Fourier coefficients C_k.

20 Claim 7 (original): A method according to claim 5, wherein the method comprises assigning a second process condition of presence of gas-filled cavities in the electrolyte to the presence of second number of consecutive Fourier coefficients C_k with mutually alternating signs.

25 Claim 8 (original): A method according to claim 5, wherein the method comprises assigning a third process condition of relatively high current density to the presence of a third number of consecutive Fourier coefficients C_k with mutually equal signs.

30 Claim 9 (currently amended): A method according to claim 2, of controlling a process of electrochemically machining an electrically conductive workpiece, wherein the process comprises applying an electric current between the workpiece and an electrically conductive electrode while electrolyte is supplied between the workpiece and the electrode, and the method of controlling comprises: